

a method of working a surface in situ, said surface in situ consisting of a material, comprising the steps of;

providing a motive source having a means of turning with a zero turning radius on said surface,

providing a tool carrier assembly comprising,

providing a depth guide comprising,

providing a ground contact surface,

providing a depth guide axis,

providing a means of rotating said ground contact surface about said depth guide axis,

providing an earthworking tool,

providing a means of retaining said earthworking tool in a fixed position relative to said depth guide axis, about which said ground contact surface rotates,

providing a means of pivotably attaching said motive source to said tool carrier assembly, allowing said tool carrier assembly to rotate about a controllably variable vertical axis,

rolling said ground contact surface in a direction on said surface in situ,

moving said material on said surface in situ with said earthworking tool,

maintaining said earthworking tool at a controlled height or depth in relation to said surface in situ,

turning said motive source on said surface in situ with a zero turning radius,

moving said tool carrier assembly in a cyclonic or anticyclonic motion about said motive source as said motive source is turned on said surface in situ,

whereby the tool carrier assembly is propelled about on said surface in situ, changing direction on said surface in situ without disengaging said tool carrier assembly from said surface being worked, and turning in said cyclonic or anticyclonic motion about said motive source, as said earthworking tool moves said material on said surface in situ, at said controlled height or depth.

Claim 41 (new).

I claim:

The method of claim 40 further comprising;

providing a lift arm assembly on said motive source comprising;

providing a means of pivotably attaching said lift arm assembly to said motive source,

providing a means of applying upward or downward force on said lift arm assembly,

providing a means of connecting said lift arm assembly to said means of pivotably attaching said motive source to said tool carrier assembly, allowing said tool carrier assembly to rotate about said controllably variable vertical axis,

whereby said lift arm assembly applies downward force on said tool carrier assembly, as said lift arm assembly is directed downward, a forward part of the motive source is tilted upward off said surface being worked.

Claim 42 (new).

I claim:

the method of claim 41 wherein said depth guide is a roller and means for rotating said roller about said depth guide axis.

Claim 43 (new).

I claim:

the method of claim 42, further providing a plurality of said roller.

Claim 44 (new).

I claim:

The method of claim 40 wherein said earthworking tool is a scraper blade,

moving said material on said surface in situ in a cyclonic or anticyclonic motion,

whereby said tool carrier assembly is propelled about said surface in situ, changing direction on said surface in situ without disengaging said tool carrier assembly from said surface being worked, and turning in said cyclonic or anticyclonic motion, as said scraper blade moves said material on said surface in situ, while maintaining said controlled height or depth, as said material is moved on said surface and is deposited in depressions in said surface in situ.

Claim 45 (new).

I claim:

the method of claim 44 wherein said depth guide is a roller and means for rotating said roller about said depth guide axis.

Claim 46 (new).

I claim:

the method of claim 45, further providing a plurality of said roller.

Claim 47 (new).

The method of claim 41 wherein said earthworking tool is a scraper blade,

moving said material on said surface in situ in said cyclonic or anticyclonic motion,

whereby said tool carrier assembly is propelled about said surface in situ, changing direction on said surface in situ without disengaging said tool carrier assembly from said surface being worked, and turning in said cyclonic or anticyclonic motion, as said scraper

blade moves said material on said surface in situ, while maintaining said controlled height or depth, as said material is moved along said surface and is deposited in depressions in said surface in situ.

Claim 48 (new).

I claim:

the method of claim 47 wherein said depth guide is a roller and means for rotating said roller about said depth guide axis.

Claim 49 (new).

I claim:

the method of claim 48, further providing a plurality of said roller.

Claim 50 (new).

I claim:

the method of claim 40, said tool carrier assembly further providing

a means of controlling the depth of said earthworking tool from said surface in situ.

Claim 51 (new).

I claim:

the method of claim 43, said tool carrier assembly further providing

a means of controlling the depth of said earthworking tool from said surface in situ.

Claim 52 (new).

I claim:

the method of claim 46, said tool carrier assembly further providing

a means of controlling the depth of said earthworking tool from said surface in situ.

Claim 53 (new).

I claim:

A method of working a surface in situ comprising the steps of:

providing a motive source comprising;

providing a chassis comprising;

providing a left side of said chassis,

providing a right side of said chassis,

providing a forward end of said chassis,

providing a left side surface contact propulsion assembly on said chassis,

providing a right side surface contact propulsion assembly on said chassis,

providing a means of bilateral propulsion control comprising;

providing a means of selectively controlling a left side speed and direction of said surface contact propulsion assembly on said left side,

providing a means of selectively controlling a right side speed and direction of said surface contact propulsion assembly on said right side,

providing a support structure of predetermined length comprising;

a main body,

a proximal end,

a distal end,

providing a means of connecting said proximal end of said support structure to said motive source,

providing a tool carrier assembly comprising;

providing a depth guide comprising;

providing a ground contact surface,

providing a depth guide axis,

providing a means of rotating said ground contact surface about said depth guide axis,

providing an earthworking tool,

providing a means of retaining said earthworking tool in a fixed position relative to, said depth guide axis about which said ground contact surface rotates,

providing a means of pivotably connecting said tool carrier assembly to said distal end of said support structure comprising;

providing a means of pivotably connecting said tool carrier assembly to said support structure allowing said tool carrier assembly to rotate about a controllably variable vertical axis,

moving said left side surface contact propulsion assembly at a determined speed and direction,

moving said right side surface contact propulsion assembly at a different speed and or direction than said left side surface contact propulsion assembly,

changing the direction of movement of said chassis on said surface in situ,

rotating said tool carrier assembly about said controllably variable vertical axis,



moving said earthworking tool about said surface in situ at a controlled depth,

whereby the variably controlled speed and direction of the surface contact propulsion assembly is controlled by said bilateral control means, to steer said motive source and to control said speed and direction of movement of said tool carrier assembly on said surface being worked, allowing said earthworking tool to move said material on said surface being worked.

Claim 54 (new).

I claim:

The method of claim 53 further providing;

providing a second means of pivotably connecting said tool carrier assembly to said support structure allowing said tool carrier assembly and said support structure to rotate in relation to one another about a somewhat horizontal axis,

providing a means of retaining said controllably variable vertical axis and said somewhat horizontal axis in a fixed position relative to one another,

Whereby said support frame and said tool carrier assembly are pivotably connected by said second means of pivotably connecting said tool carrier assembly to said support structure, said means for pivoting about said controllably variable vertical axis, and said means of retaining said controllably variable vertical axis and said somewhat horizontal axis in a fixed position relative to one another, allowing said earthworking tool to remain engaged with the surface as said motive source rocks from side to side as it encounters surface irregularities on said surface in situ, while said motive source propels said tool carrier assembly about the surface.

Claim 55 (new).

I claim:

the method of claim 54 further providing a lift arm assembly and

a means of applying upward or downward force on said lift arm assembly

a means for pivotably attaching said lift arm assembly to said motive source,

a means for attaching said lift arm assembly to said proximal end of said support structure

forcing said lift arm assembly downward and

forcing said forward end of said motive source to tilt upward.

Claim 56 (new).

I claim:

the method of claim 55 wherein said earthworking tool is a scraper blade.

Claim 57 (new).

I claim: